

4. On a Collection of Mammals from Persia and Armenia
presented to the British Museum by Col. A. C. Bailward.
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[Received October 27, 1905.]

(Plate XVI.†)

The National Museum owes to Col. A. C. Bailward a most interesting collection of small mammals from Persia and Armenia, obtained during the past summer on his way home from India to England. Before starting he applied to the Society's Secretary for advice on the subject, and Dr. Mitchell suggested his taking with him someone trained to collect mammals and birds. By good fortune Mr. R. B. Woosnam, one of our ablest collectors, who had already done good work in South Africa, was able to go with Col. Bailward, and the specimens now described were all trapped and skinned by him.

Considering that the expedition was primarily a shooting-trip, that it never stayed more than a day or two in any place, and that the party rode something like 20 or 30 miles every day, the number of mammals obtained—about 70—is a credit to Mr. Woosnam, who also collected about 380 birds.

About 31 species are represented in the Mammal collection, of which I have described five as new. Of these by far the most interesting is the beautiful large-eared mouse described as *Calomyscus bailwardi*, which forms a new genus entirely unlike anything hitherto known from the Old World, but allied to the North-American *Peromyscus*.

Col. Bailward's party entered Persia at the head of the Persian Gulf, beginning work at Ahwaz, on the Karun River. From there they travelled north-eastward across the Bachtari mountains to Isfahan, and it was in this region that the majority of the novelties were obtained. From Isfahan they went westwards to Kermanshah, and thence by way of Lake Van, Erzeroum, and Baibort to Trebizond.

While the Armenian specimens obtained during the trip are most valuable, their interest is dwarfed by that of the series from Persia, for from the region travelled by Col. Bailward the only mammals that have ever been collected were those obtained in 1870–72 by the late Dr. W. T. Blanford, and described in his work on Eastern Persia‡, the few collected and described by de Filippi§, and a small series obtained in 1902 by Mr. H. F. Witherby. From the character of the present collection it is

* [The complete account of the new species described in this communication appears here; but since the names and preliminary diagnoses were published in the 'Abstract,' such species are distinguished by the name being underlined.—EDITOR.]

† For explanation of the Plate, see p. 527.

‡ 'Eastern Persia,' Zoology and Geology (1876).

§ 'Viaggio in Persia,' p. 342 (1865).

evident that much remains to be done in this area, and I would draw the attention of other Indian sportsmen to Col. Bailward's success, with the hope that when coming home to England they may follow his admirable example in working Persia by the way.

1. *VESPERTILIO* sp., near *V. serotinus*.

♀. 27. Mala-i-Mir, 70 mi. N.E. of Ahwaz. 4300'.

This Bat, of which Mr. Witherby also obtained examples near Telespid, is a pale form of the Serotine group, but I cannot at present determine its exact relationship to *V. turcomanus* Eversm. and *V. mirza* Fil. One thing is clear, however, that *V. shiraziensis*, described in 1871 by Dobson, but afterwards referred by him, in company with *turcomanus* and *mirza*, to *V. serotinus*, is a perfectly distinct species, readily distinguishable by its much greater size.

2. *VESPERTILIO MATSCHIEI* PELLUCENS, subsp. n.

♂. 14, 15, 16, 17, 19. Ahwaz, Karun R., S.W. Persia. 220'.
"Common in the town."

Closely similar to the species recently described as *V. matschiei**, from Aden, but slightly larger, and markedly paler in colour, the upper surface uniformly pale buffy, very slightly darker than Ridgway's "cream-buff," which the under surface just matches. Ears and membranes pale brownish, the hinder edges of the wings white, and the posterior third of the interfemoral transparent white or colourless. In true *matschiei* the membranes are dark opaque brown throughout.

Dimensions of the type:—

Forearm 35.7 mm.

Head and body (in flesh) 45; tail 43; ear 13.

Skull, greatest length 13.2.

Hab. as above.

Type. Male. B.M. No. 5.10.4.4. Original number 16. Collected 28 Mar., 1905.

This beautiful little Bat is readily distinguishable from all others by its uniform pale colour, the hairs being pale to their roots. In the pale form of *Pipistrellus kuhlii*, found in company with it, the bases of the hairs are dark, even though the tips are light. The peculiar translucent character of the posterior third of the interfemoral is also very unusual.

3. *PIPISTRELLUS KUHLI* Natt.

♂. 2, 5, 18, 20, 21. Ahwaz, Karun R. 220'.

♀. 11. Dizful, near Ahwaz.

These specimens vary a good deal in colour, some being nearly as light as the darker examples of the last species. But the darkest are far lighter than South European specimens, and no doubt

* Thos. Ann. Mag. N. H. (7) xvi. p. 573 (1905).

they represent a valid lighter-coloured Eastern subspecies, for which there appear to be several names available.

"Shot close to the town of Ahwaz—their fur matches the soil in colour."—*R. B. W.*

4. *PIPISTRELLUS ALADDIN* THOS.

Abstr. P. Z. S. No. 24, p. 23, Dec. 19, 1905.

♂. 41. Derbent, 50 mi. W. of Isfahan. 6500'. B.M. No. 5.10.4.13. *Type*.

A very small species. The minute upper premolar in the tooth-row.

Size about as in *P. nanus* and *mimus*. Ears of medium size; inner margin slightly convex, outer margin with a well-marked concavity in its middle third; antitragal notch shallow, the outer basal lobe low, buried in the fur. Tragus of medium length, rather broad, its broadest point just above its inner base; inner margin slightly concave; outer basal lobe rounded. Wings to the base of the toe.

General colour above "wood-brown," the hidden basal halves of the hairs blackish. Under surface similar, but rather lighter. Ears and wing-membranes blackish grey, the hinder edge of the wing from the tip of the fifth finger backwards prominently white, as in *P. kuhlii*.

Skull small, delicate; much as in *P. nanus*. Outer upper incisors about equalling the well-marked secondary cusp of the inner. Large premolar well separated from the canine, the small premolar standing in the tooth-row, wholly visible from without.

Dimensions of the type:—

Forearm 31 mm.

Head and body (in flesh) 41; tail 35; ear 10.

Skull—greatest length 11·3; basal length in middle line 8·7; breadth of brain-case 6·1; palatal length 4; combined length of large upper premolar and two molars 2·8; lower tooth-row from front of canine 4·2.

Hab. and *Type* as above.

This little Bat is perhaps a representative of the Indian *P. mimus* Wrought.*, with which it agrees in size and certain other characters. But it is much lighter in colour, the extreme tips of the dorsal hairs in that animal being alone pale brown, the rest being blackish, and the small upper premolar does not stand so well in the tooth-row, although more so than in most species of the genus. *P. nanus* again is a dark-coloured bat, as dark as a European Pipistrelle.

5. *MYOTIS MYOTIS OMARI*, subsp. n.

♂. 42, 43. Derbent, 50 mi. W. of Isfahan. 6500'.

(♀. No. 13. Near Telespid, S.W. Persia. H. F. Witherby.

Essential characters as in true *myotis*, the ears apparently

* Journ. Bombay Nat. Hist. Soc. 1899, p. 722.

nearly or quite as long as usual, not shortened as in the N. Indian *blythi*. But the colour is very different, being that characteristic of specimens from desert-regions. General colour above uniform pale "wood-brown," the basal halves of the hairs smoky brown, succeeded by a broad ring of glossy whitish sandy and a fine pale brown point. Under surface broadly washed with "cream-buff." Membranes and ears also much paler brown than in *myotis*.

Teeth rather smaller than those of true *myotis*, larger than those of *blythi*.

Measurements of the type:—

Forearm 60 mm.

Head and body (in flesh) 75; tail 61; ear 26.

Skull—greatest length 22.2; breadth of brain-case 9.9; upper tooth-row from front of canine 9.5; front of lower canine to back of m_3 10.1.

Hab. Persia; type from Derbend. Alt. 6500'.

Type. Adult male. B.M. No. 5.10.4.14. Original number 42. Collected 14 May, 1905.

It is quite natural to find a desert-coloured form of the common *M. myotis* inhabiting Persia. Mr. Witherby's specimen is very similar to the two presented by Col. Bailward.

Mr. Miller has shown* that the Indian *Vespertilio blythi* Tomes is definably different from the European *M. myotis*, to which Dobson had assigned it. I may further note that Dobson's *V. africanus*† is clearly the same as *M. blythi*, the collection from which the type came having been wrongly labelled as from the Gaboon, when it really was from N. India. Dobson's mistake was therefore quite excusable.

6. NEOMYS FODIENS Schr.

♂. 53. 25 miles N. of Erzeroum. 7000'.

"Caught by a brook in the mountains. Was swimming and diving with two others."—*R. B. W.*

7. ERINACEUS EUROPEUS L.

56. ♀. Tortoum R., N. of Erzeroum.* 4000'.

Probably belonging to the form recognised by Barrett-Hamilton as *E. e. concolor* Mart.

8. CANIS AUREUS L.

♂. 12. Shus, near Dizful, Arabistan.

9. VULPES VULPES FLAVESCENS Gray.

♂. 7. Bunde Kil, Karun R. 250'.

10. PUTORIUS NIVALIS L.

♂. 61. Baibort. 7000'.

* P. Biol. Soc. Wash. xiii. p. 155 (1900).

† Cat. Chir. B.M. p. 310.

11. *MELLIVORA INDICA* Kerr.

♀. 24. Ram Hormuz, E. of Ahwaz.

12. *CITELLUS XANTHOPRYMNUS* Benn.

♂. 60. Baibort, between Erzeroum and Trebizond.

In the fulvous summer pelage. Those obtained by Mr. Danford in Central Asia Minor are in the grey winter coat.

13. *CITELLUS CONCOLOR* Geoff.

♀. 47. Bast-Kala, near Lake Van. 7200'.

♂. 52. ♀. 48, 49. Lake Van. 5500'.

"Very plentiful on open sandy ground; to be seen about all day."—*R. B. W.*

14. *TATERA TENIURA* Wagn.

♂. 8, 9, 10. Bunde-Kil, Karun R. 250'.

♀. 13. Shus, near Dizful. 500'.

♂. 23. Ram-Hormuz, 60 mi. E. of Ahwaz. 500'.

♀. 28. Mala-i-Mir, 70 mi. N.E. of Ahwaz. 3300'.

Whether this species grades into the Indian *T. indica* remains to be seen when more material is available.

15. *MERIONES PERSICUS* Blanf.

♀. 26. Mala-i-Mir, 70 mi. N.E. of Ahwaz, S.W. Persia.

♂. 36. Dopulan, 120 mi. N.E. of Ahwaz.

No. 26 agrees very well with a co-type, a female, in the British Museum from Kohrud, but 36 has longer ears and smaller bullæ. As its locality, however, is intermediate between those of 26 and the type, I presume the differences are either individual or sexual.

I am glad to be able to come at last to a definite conclusion about the generic position of this animal, the teeth of the co-type being so worn down that it was impossible till now to decide whether it was a *Meriones* or a *Gerbillus*. The new specimens show clearly that its teeth are those characteristic of the former genus.

16. *MERIONES ERYTHRURUS* Gray.

♂. 1, 3, 22. Ahwaz, Karun R. 220'.

This Gerbille, which I provisionally refer to the Afghan species, is also nearly related to *M. meridianus* Pall.

"Plentiful all along the flat coast plain from Bushire to the Karun River. Nocturnal."—*R. B. W.*

17-18. *MUS*—*MUSCULUS* group.

♀. 29. Deh-i-Diz, 90 mi. N.E. of Ahwaz. 5500'.

♀. 31. Bachtuari Mts., 100 mi. N.E. of Ahwaz. 5800'.

♀. 37. Bagh-i-Badaran, 30 mi. S. of Isfahan. 8000'.

♀. 45. Sakiz, 100 mi. N. of Kumanshah. 5000'.

♂. 55. Tortoum R., N. of Erzeroum. 4000'.

When the difficult *Mus musculus* group comes to be worked out these specimens will be of the greatest value, but they cannot well be determined at present. No. 55 is a typical dark long-tailed house-mouse; the others are pale desert forms.

19. *MICROMYS MYSTACINUS* Danf. & Alst.

♂. 64, 65, 66. ♀. 67. Sumela, 30 mi. S. of Trebizond. 1500'.

"Trapped on hill-side below the fir-woods."—*R. B. W.*

20. *MICROMYS SYLVATICUS ARIANUS* Blanf.

♂. 30, 34. ♀. 32. Bachtari Mts., 100 mi. N.E. of Ahwaz. 5800'.

These specimens are coloured very like the South Persian *M. s. witherbyi* Thos., but have the larger teeth of *arianus*.

21. *CALOMYS CUS BAILWARDI* Thos. (Plate XVI.)

Abstr. P. Z. S. No. 24, p. 23, Dec. 19, 1905.

25. ♂. Mala-i-Mir, 70 mi. N.E. of Ahwaz. 4300'. 10 April, 1905. B.M. No. 5.10.4.68. *Type*.

CALOMYS CUS.

A member of the *Cricetinae*, or biserial-toothed Muridae, of which the only recent Old World* members hitherto known have been the *Cricetus* group and the South African *Mystromys*. Most nearly allied to the N. American *Peromyscus*, with which it shares the possession of only five cusps on the anterior upper molars.

External form as in *Peromyscus*, but the tail bushy terminally, as in many Gerbilles, to which the pallid colour also gives a resemblance. Ears large. Fur soft. Feet of normal length and structure; soles naked except just under the heels; sole-pads six, the posterior one far back, separated from the others. Tail long, pencilled, the single specimen with a peculiar double tuft of white hairs at a point two-thirds along it, which may indicate the presence of a special gland, or, more probably, be merely due to an accidental injury.

Skull, as compared with that of *Peromyscus*, low, flat, and rounded, the shape of the brain-case recalling that of a dormouse. Bullae low, little developed. Palatal foramina comparatively small. Coronoid process of mandible long, considerably overtopping the condyle. Incisors smooth. Molars brachyodont, thin, pattern very similar to that found in *Peromyscus*, but even more simple; the cusps low, and the valleys between them shallow, and without any trace of supplementary intermediate ridges. First upper molar with only five cusps and without any trace of that duplication of the anterior cusp so characteristic of *Cricetus* and its allies.

* Madagascar excepted.

Type :—

CALOMYSCUS BAILWARDI.

A beautiful Gerbille-coloured, long-eared, tufted-tailed mouse of about the size of *Mus musculus*.

Fur soft and fine, hairs of back about 7 mm. in length.

General colour above a beautiful "pinkish buff," darkened on the back by the tips of the hairs being black, clear and rich along the flanks and down the outer sides of the legs to the ankles. Whole of under surface pure sharply contrasted white, which ascends rather high up on the cheeks, nearly to the eyes, covers the whole of the fore limbs, ascending almost to the shoulder, and the inner side of the hind limbs. Head buffy, slightly paler than back. Ears very large, practically naked, pale brown, their few fine scattered hairs white; a small white patch above the base of their anterior margin. Upper surface of hands and feet pure white. Fifth hind toe long, reaching to the middle of the terminal phalanx of the fourth. Tail long, well haired, the hairs lengthening terminally into a pencil; pure white below, above whitish proximally, darkening terminally to blackish.

Skull with the nasal region long and narrow. Interorbital space broad, smooth, slightly convex, its edges scarcely marked, no ridges developed on the parietals. Anterior plate of zygomata not projected forwards. Palatal foramina ending half their own length in front of the molars.

Dimensions of the type (measured in the flesh) :—

Head and body 78 mm.; tail 87; hind foot 20·5; ear 21·5.

Skull—greatest length 26; basilar length 19·2; greatest breadth 13·8; nasals $10·1 \times 3·2$; interorbital breadth 4·4; brain-case breadth 12; interparietal $3·1 \times 8·7$; palatilar length 10·5; diastema 6·9; palatal foramina $4·5 \times 1·8$; length of upper molar series 3·3.

Hab. and *Type* as above.

"Trapped among barren rocks on mountain-side above the Mala-i-Mir marsh."—*R. B. W.*

The discovery of this beautiful animal is of extreme interest, as it belongs to a group hitherto believed to be exclusively American and Malagasy, with the exception of *Cricetus* and *Mystromys*. This group of biserial-toothed Muridæ is apparently a very primitive one*, and was no doubt spread widely over the Old World as well as the New before the triserial *Murinae* were developed and beat it in the struggle for existence throughout the Eastern Hemisphere. But they penetrated neither to Madagascar nor America, in which countries the Muridæ are all of the biserial group. Now in *Calomyscus* we have another Cricetine

* Several fossil members of this group, Eocene and Miocene, are known, and are all referred by palæontologists to *Cricetodon* Lartet, but if still existing they would apparently represent quite a number of what mammalogists now call genera. I am indebted to Dr. Forsyth Major for showing me a series of representative specimens of the fossil forms.

Mouse preserved in the mountains of Persia, closely allied to the N. American *Peromyscus*, and widely different from any of the Asiatic Muridae hitherto known.

I have named this striking novelty in honour of Col. Bailward, to whose generosity the Museum is indebted for the interesting collection of which it forms a part.

22. *CRICETULUS PHEUS* Pall.

♂. 46. Sakiz, N.W. of Karmanshah. 5000'.

♀. 54. Tortoum R., 60 mi. N. of Erzeroum. 4000'.

♂. 58. Baibort, Choruk River, between Erzeroum and Trebizond. 5500'.

"Trapped among the corn-lands."—*R. B. W.*

23. *MICROTUS NIVALIS* Mart.

♂. 62. 25 miles N. of Baibort. 7000'.

24–27. *MICROTUS* spp.

♂. 40. Derbend, 60 mi. W. of Isfahan. 6500'.

♀. 44. Diwan-Déré, 150 mi. N.W. of Kermanshah. 6500'.

♀. 57. Arab-Keni, 60 mi. N. of Erzeroum. 9000'.

♀. 59. Baibort. 5000'.

♀. 63. 70 mi. N. of Baibort. 7000'.

These five Voles belong to at least four species.

28. *ELLOBIUS LUTESCENS* Thos.

♂. 51. Lake Van. 5000'.

Topotype. Quite similar to the original specimens.

29. *ELLOBIUS WOOSNAMI* Thos.

Abstr. P. Z. S. No. 24, p. 23, Dec. 19, 1905.

♂. 38. ♀. 39. Dumbench, 50 miles N. of Isfahan. 7000'.

Colour much as in *E. lutescens*. Teeth of much simpler pattern.

Fur soft and loose in texture; hairs of back about 9 mm. in length. General colour above dull greyish buffy, the hairs slaty grey, with dull buffy tips. Sides paler greyish, not more strongly buffy as is the case in *E. talpinus*. Head blackish above, contrasting markedly with the general colour, much more so than in *E. lutescens*. Under surface similar to sides, the tips of the hairs very pale buffy.

Skull rather more heavily built than in *E. lutescens*. Zygomata not so expanded vertically in the centre as in *lutescens* and *fuscocapillus*, its greatest vertical breadth 3 mm. or less.

Teeth of a more simple type than those of *E. lutescens* and *fuscocapillus*, and nearly corresponding with those of fig. 6 of Büchner's plate* of *Ellobius* teeth. The last upper molar with

* Mamm. Przewalsk. pl. xv. (1889).

one simple deep reentrant angle on each side, the projecting angles bordering them in front and behind nearly equally salient; no trace of the secondary antero-external reentrant angle, which in *E. lutescens* tends to divide into two the large antero-external projecting angle; posterior lobe diminished or absent. Last lower molar with the anterior external reentrant angle about half the depth of the posterior one; in *fuscocapillus* it is quite as deep as the posterior one, while in *talpinus* it is almost non-existent.

Dimensions of the type (measured in the flesh):—

Head and body 112 mm.; tail 16; hind foot 23.

Skull—greatest length 32; basilar length 29·2; zygomatic breadth 24; nasals $8\cdot8 \times 3\cdot5$; palatilar length 19; diastema 12·5; length of upper molar series (alveoli) 7·4.

Hab. as above.

Type. Female. B.M. No. 5.10.4.65. Original number 39. Collected 9 May, 1905.

“Trapped in corn-land in broad valley, near a stream. Plentiful.”—*R. B. W.*

In colour this *Ellobius* has a close resemblance to the *E. lutescens* of Lake Van, but its teeth are of much simpler pattern, more approaching those of *E. talpinus*.

30. ALLACTAGA WILLIAMSII Thos.

♂. 50. Lake Van.

A topotype of this beautiful Jerboa, which was described in 1897 from specimens presented to the British Museum by Col. W. H. Williams, R.A.

31. LEPUS CRASPEDOTIS Blauf.

♂. 4. Karun R., N. of Ahwaz. 250'.

♀. 6. Bunde Kil, Karun R. 250'.

This appears to be the lowland coast representative of the ordinary plateau Hare of Persia and Afghanistan, to which the name of *L. tibetanus* should probably be applied.

It is distinguished by its shorter fur, which is silvery whitish at base, with a broad black subterminal ring. In the highland forms the part below the black ring is slaty basally, with a creamy terminal half.

The type was described from Pishin, S.W. Baluchistan, about 100 miles from the coast.

EXPLANATION OF PLATE XVI.

Calomyscus bailyardi; natural size: p. 524.